

## ROSETTI, LEANA

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**From:** Eckley, Chris  
**Sent:** Saturday, October 04, 2014 4:58 PM  
**To:** ROSETTI, LEANA; Fleck, Jacob  
**Cc:** Bain, Andrew W.; David Friedman  
**Subject:** Re: Methyl mercury monitoring for Southeast Connector

Hi Leana,

The idea of having NDEP incorporate the potential impacts of the wetland construction into their existing monitoring network sounds good. Sounds like they currently have 14 locations they sample? In terms of measuring low level Hg/MeHg, may be able to significantly economize on the number of locations where these parameters were specifically measured...a handful upstream of downstream of the proposed wetlands would probably be sufficient to meet this additional projects objectives.

For the water sampling, the timing of the sampling events will be important due to the potentially large temporal variability in MeHg production/concentrations seasonally. Perhaps quarterly sampling would be sufficient to capture some of these dynamics, but may want these sampling events to be specifically target times with hydrological conditions that may be conducive to mobilization of MeHg from existing and/or future wetlands in order to accurately characterize the baseline.

Alternatively, as Jacob mentioned, one of the benefits of the biosentinel approach is that organisms would temporally integrate MeHg levels over time. I don't have any direct experience with this approach though.

--Chris

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**From:** ROSETTI, LEANA  
**Sent:** Thursday, September 25, 2014 1:43 PM  
**To:** Eckley, Chris; Fleck, Jacob  
**Cc:** Bain, Andrew W.; David Friedman  
**Subject:** Methyl mercury monitoring for Southeast Connector

Hello Chris and Jacob,

I hope this email finds you well. You have both helped me a lot in the last year in dealing with the Southeast Connector project, and now I have another question for you. As you may recall the project involves the creation of about 80 acres of wetlands, many of which will be fed by Steamboat creek, which is known to have mercury contamination. The latest development is that the Army Corps appears to be fine with the project in its current form, and does not believe that methylation of mercury will be a concern (see the attached "USACE SEC Mercury Memo").

As both of you have opined, the proposal does sound like it may limit formation of methyl mercury, but not with enough certainty to give us total confidence, and a monitoring plan that establishes baseline levels of methyl mercury, as well as levels after construction, is needed to ensure that they aren't exacerbating the problem. While the permittee (RTC, the

Regional Transportation Commission) has responded favorably to our general BMP guidelines about materials management and preventing releases of Hg, they've not addressed the monitoring request.

In discussing this with Andy Bain in Superfund and his counterpart David Friedman at NDEP, we had the idea that perhaps the sampling we are requesting could be combined with the sampling that NDEP already does in Steamboat under the 303 (d) impaired waters program. While mercury is not currently the focus, they do sample for total mercury, and could possibly sample for methyl mercury and other relevant compounds as well. If appropriate, we may consider asking RTC to fund NDEP to do the methyl mercury analysis, interpretation and reporting, which may be more cost effective than a standalone monitoring program.

NDEP doesn't have an SAP for the sampling they do, but they did send me the following information on their current sampling:

We sample the water column at the following sites in the Steamboat drainage on a quarterly basis. However, metals (such as total/dissolved Mercury) are only analyzed for twice a year.

SB1 Outfall	Little Washoe
SB3 Valley	Steamboat Creek @ Pleasant
SB5 Road	Steamboat Creek @ Rhodes
SB6 Road	Steamboat Ditch @ Rhodes
SB7 Grade	Steamboat Creek @ Geiger
SB31 Road	Browns Creek @ Joy Lake
SB42 Pkwy	NF Whites Creek @ Arrow Creek
SB43 Pkwy	Thomas Creek @ Ventana
SB33 Road	MF Whites Creek @ Sage Hill
SB44 Road	SF Whites Creek @ Old Virginia
SB29 Pond	Thomas Creek near Alexander
SB11 Lane	Steamboat Creek @ Short
SB17 Pembroke	Steamboat Creek @
SB19	Steamboat Creek @ Cleanwater Way

The locations are here:

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One gap I'm seeing is that there is no sampling at the outlet to the Truckee River, but there is sampling downstream of all of the constructed wetlands, so that may be enough.

I wanted to see if you think the type of monitoring needed would be at all compatible with NDEP's current monitoring, as well as any suggestions for specific examples of monitoring programs that we should recommend to RTC (and perhaps as a result, NDEP). Previously Jacob had suggested the Delta Methylmercury TMDL workplan as an example of a monitoring plan with similar objectives (p.24-30 of Section 6, or p. 28-34 of the PDF page:

[http://delta-mercury-nps.org/documents/NPSWorkgroup\\_CollaborativeWorkplan\\_Draft\\_20130419.pdf](http://delta-mercury-nps.org/documents/NPSWorkgroup_CollaborativeWorkplan_Draft_20130419.pdf))

Another possible example is in a 401 certification issued for a restoration project in the Cosumnes River that required methyl mercury monitoring, which I've attached; the monitoring details are on p. 10-13. Here, they require fish sampling as well; I'm not sure if that's something crucial to require. In the Cosumnes situation, a TMDL for mercury was in the works. (Interestingly, Steamboat is not considered impaired for mercury, and the results from NDEP sampling has shown total mercury to be nondetect.)

I am also attaching RTC's latest response to EPA's comments regarding mercury methylation issues. I don't see any significant changes in how they are proposing to do the constructed wetlands. Chris, you are a lot more familiar with the project than Jacob; I don't know if you agree. Our main concern has been the Butler Ranch wetlands, which will be flooded by Steamboat and are designed to be wet in the winter/early spring and infiltrate quickly.

Thanks so much,

*Leana*

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